

WHAT IS CLAIMED IS:

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A17
1. An image processing apparatus comprising:
- reconstructing means for reconstructing print data for  
instructing the contents of objects positioned in one page in  
5 band units obtained by dividing the page into a plurality of  
regions;
- converting means for converting data reconstructed by said  
reconstructing means into PDL data in a page description language  
form; and
- 10 transmitting means for transmitting the PDL data.
2. The image processing apparatus according to claim 1, wherein  
said reconstructing means includes:
- storage means for storing print data for one page;
- 15 and
- a graphics library for generating data reconstructed  
in the band units by retrieving the contents stored in said  
storage means, and
- 20 said converting means is a printer driver for converting  
data supplied in the band units from said graphics library into  
the PDL data.

3. The image processing apparatus according to claim 1, wherein  
said reconstructing means and said converting means  
include: a printer driver; and storage means, and

5 said printer driver stores print data supplied from said  
graphics library in said storage means, and retrieves said  
storage means after print data for one page has been stored in  
said storage means so that data reconstructed in the band units  
is read from said storage means, and read data is converted into  
the PDL data.

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4. The image processing apparatus according to claim 1, wherein  
said reconstructing means divides said objects across  
plural bands in band units to generate data reconstructed in the  
band units.

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5. The image processing apparatus according to claim 4, wherein  
said reconstructing means divides bit map data at boundaries  
among the bands, when the objects across plural bands are divided  
for each band in a case where print data is bit map data.

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6. The image processing apparatus according to claim 4, wherein  
said reconstructing means transmits text data for each of  
corresponding bands, when the objects across the plural bands  
are divided for each band in a case where print data is text data  
25 which instructs a character code.

7. The image processing apparatus according to claim 4, wherein  
said reconstructing means divides image data such that  
divided objects overlap one another, when the objects across the  
plural bands are divided for each band in a case where print data  
5 is image data.

8. The image processing apparatus according to claim 4, wherein  
said reconstructing means divides the objects into draw  
primitives, and handles sets of the draw primitives belonging  
10 to the bands as objects for each band so that the objects across  
the plural bands are divided for each band.

9. The image processing apparatus according to claim 4, wherein  
said reconstructing means makes approximation to curves  
15 with a plurality of straight lines, when print data is graphics  
data indicating the curves so as to divide the curves across the  
plural bands for each band.

10. The image processing apparatus according to claim 1, wherein said reconstructing means includes:

detecting means for detecting processing performance of said image processing apparatus; and

5 determining means for determining whether or not print data is reconstructed, and wherein print data is transmitted to said converting means, when said determining means has determined that reconstruction is not performed.

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11. The image processing apparatus according to claim 1, wherein said band is obtained by dividing a page in a main scanning direction and a sub-scanning direction.

15 12. An output apparatus having a structure that PDL data described in a page description language corresponding to each object is supplied in band units obtained by dividing one page into a plurality of regions,

said output apparatus comprising:

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receiving means for receiving the PDL data;

raster converting means for converting the PDL data received by said receiving means into raster data;

a buffer for storing, in band units, raster data converted by said raster converting means; and

a printing mechanism for printing the objects on a printing sheet in accordance with raster data read from said buffer.

Sub A3 13. The output apparatus according to claim 12, wherein said raster converting means clips raster data allowed to overflow the band to supply raster data to said buffer.

Sub A3 10 14. An image processing system comprising:  
an image processing apparatus including:  
reconstructing means for dividing, in band units, print data indicating contents of objects positioned in one page which is composed of a plurality of the bands and reconstructing print data in the band units;  
15 converting means for converting data reconstructed by said reconstructing means into PDL data in a page description language form; and  
transmitting means for transmitting the PDL data, and  
an output apparatus including:  
20 receiving means for receiving the PDL data;  
raster converting means for converting the PDL data received by said receiving means into raster data;  
a buffer for storing, in the band units, raster data converted by said raster converting means; and

a printing mechanism for printing the objects on a printing sheet in accordance with raster data read from said buffer.

- 5 15. An image processing method for an image processing system including an image processing apparatus and an output apparatus, said image processing method comprising:

the steps which are performed by said image processing apparatus:

- 10 a first step for dividing, in band units, print data indicating contents of objects positioned in one page which is composed of a plurality of the bands;

a second step for reconstructing print data in the band units;

- 15 a third step for converting reconstructed data into PDL data in a page description language form; and

a fourth step for transmitting the PDL data, and

the steps which are performed by said output apparatus:

a fifth step for receiving the PDL data;

- 20 a sixth step for converting the PDL data received by said receiving means into raster data;

a seventh step for storing, in the band units, raster data converted by said raster converting means; and

- 25 an eighth step for printing the objects on a printing sheet in accordance with stored raster data.

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